

Remarks

In view of the above amendments and the following remarks, reconsideration of the rejection and further examination are requested.

Claim 16 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Zucker (US 5,802,029) in view of Ueki (US 6,052,344) and Horigome (US 5,729,514).

Claim 16 has been amended so as to further distinguish present invention from the references relied upon in the above-mentioned rejection. Further, claim 16 has been amended so as to make a number of minor editorial revisions thereto.

It submitted that amended claim 16 is patentable over the references relied upon in the above-mentioned rejection for the following reasons.

Claim 16 is patentable over the combination of Zucker, Ueki and Horigome, since claim 16 recites an apparatus for reproducing information in an optical disk of a first recording density and in another optical disk of a second recording density lower than the first recording density, the apparatus including, in part, an optical head having a light source operable to emit a main beam and sub-beams onto adjacent tracks formed in an optical disk, the main beam having a same spot size for the optical disk of the first recording density and the optical disk of the second recording density. The combination of Zucker, Ueki and Horigome fails to disclose or suggest the optical head as recited in claim 16.

Zucker discloses a device that is capable of reproducing data from both audio CDs and DVDs which have varying storage densities. The device includes a laser diode LD, a grating G, a polarization beam splitter PBS, a collimator lens CL, a quarter wave plate WL, an objective lens OL, a concave lens KL, a cylindrical lens ZL and a detector PD. The objective lens OL is designed as a double-focus lens so as to vary the light spot diameter of the laser generated by the laser diode LD that is focused on the disk depending on whether the disk is a CD or a DVD. (See column 3, line 44 – column 4, line 12 and Figures 1-3).

Based on the above discussion, it is apparent that the device of Zucker utilizes the objective lens OL to change the light spot diameter emitted to the disk depending on whether the disk being read by the device is a DVD or a CD. On the other hand, claim 16 clearly recites that the main beam emitted by the light source of the optical head has a same spot size for the optical disk of the first recording density and the optical disk of the second recording density that is lower than the first recording density. Therefore, it is clear that Zucker fails to disclose or

suggest this feature of claim 16. As a result, it is necessary for Ueki and/or Horigome to disclose or suggest this feature in order for the combination of these references to render claim 16 obvious.

As for Ueki, it discloses an apparatus for reproducing data from optical disks that have different recording densities (e.g., a CD and a DVD). The apparatus has a system controller 7 that determines the type of disk and switches between different types of tracking error signals depending on the determination of the disk type. Once the system controller 7 determines the disk type, an optical pickup 2 of the apparatus is controlled so as to adjust the spot size emitted to the disk. If the disk is determined to be a low density disk (e.g., a CD), the spot size emitted to the disk is: $NA=0.38mm$. Further, if the disk is determined to be a high density disk (e.g., a DVD), the spot size emitted to the disk is: $NA=0.6mm$. (See column 6, lines 6-41).

Based on the above discussion, it is apparent that the apparatus of Ueki is such that the optical pickup 2 changes the spot size of the light emitted to the disk surface depending on whether the disk is a high density disk or a low density disk. Therefore, it is apparent that Ueki also fails to disclose or suggest that the main beam has the same spot size for the optical disk of the first recording density and the optical disk of the second recording density that is lower than the first recording density, as is recited in claim 16. As a result, since Zucker and Ueki both fail to disclose or suggest this feature of claim 16, it is necessary for Horigome to disclose this feature in order for the combination to render claim 16 obvious.

Horigome discloses a device for removing a cross talk component of an adjacent track from a reproduction signal of a target track by utilizing a subtracting unit 30 (See column 5, lines 7-36 and Figure 4). However, Horigome likewise fails to disclose or suggest a main beam emitted from a light source of an optical head having a same spot size for an optical disk of a first recording density and an optical disk of a second recording density that is lower than the first recording density, as is recited in claim 16.

In consideration of the above, Zucker, Ueki and Horigome do not, either alone or in combination, disclose or suggest the optical head having the light source operable to emit the main beam and the sub-beams onto adjacent tracks formed in an optical disk, the main beam having a same spot size for the optical disk of the first recording density and the optical disk of the second recording density that is lower than the first recording density, which is recited in

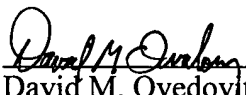
amended claim 16. Therefore, one of ordinary skill in the art would not have been motivated to modify or combine the references so as to obtain the invention as recited in amended claim 16.

Because of the above-mentioned distinctions, it is believed clear that claim 16 is allowable over the references relied upon in the rejection. Further, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result, or otherwise render obvious, the present invention as recited in claim 16. Therefore, it is submitted that claim 16 is clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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